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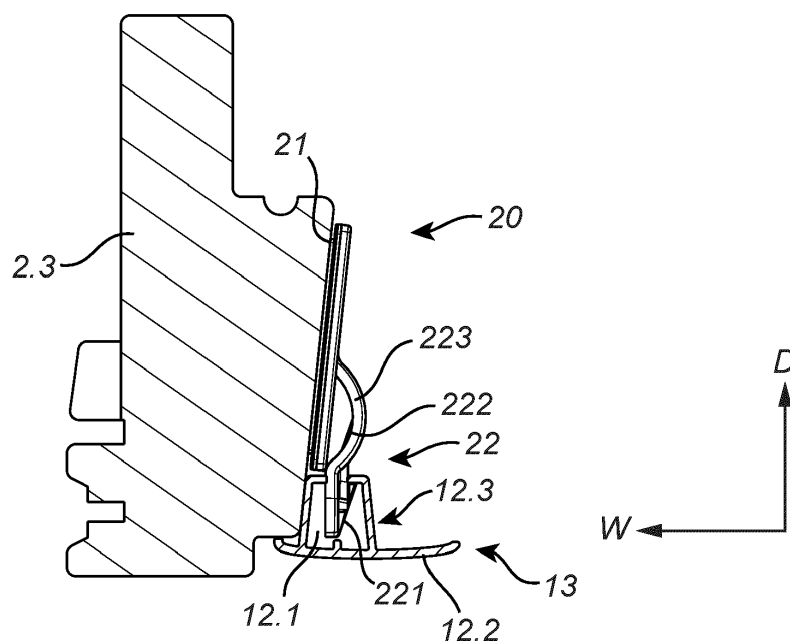
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(54) **AN INTERNAL ROOF WINDOW SCREENING ARRANGEMENT WITH A CONNECTION PART COMPRISING ENGAGEMENT MEANS FOR ENGAGEMENT WITH A SIDE RAIL**

(57) The internal screening arrangement (10) is intended to be mounted on a frame structure (2) of a roof window. The screening arrangement (10) comprises two side rails (12, 13) and at least one connection part (20) for each side rail (12, 13). The connection part (20) comprises an adhesive portion (21) by which the connection part (20) is adapted to be mounted on the side member

(2.2, 2.3). The connection part (20) comprises engagement means (22) adapted to engage with engagement means (12.1) of the side rail (12, 13) to obtain the mounted condition, such that the side rail (12, 13) is freely slidable in the longitudinal direction (L) when engaged with the connection part (20).

**Fig. 10****EP 4 481 132 A1**

Description

Technical Field

[0001] The present invention relates to an internal roof window screening arrangement for a roof window, the roof window having a frame structure comprising a top member and a bottom member extending in a width direction and two mutually parallel side members extending in a longitudinal direction, the width direction and longitudinal direction defining a plane, the screening arrangement comprising two side rails and at least one connection part for each side rail, each side rail being adapted to be mounted on a side member of the frame structure by means of the at least one connection part to obtain a mounted condition.

Background Art

[0002] Such internal screening arrangements provided for screening of windows installed in a roof are typically brought from the supply condition to the mounted condition on the frame structure of the roof window by a user not necessarily possessing craftsman skills. Since the roof window is by nature provided in an inclined position, generally in a clearing in an inclined inner wall, mounting of such screening arrangements is particularly challenging. The inclined position also poses challenges in use, since all components of the screening arrangement will be subjected to gravity, the resulting force of which will most often be directed into the interior of the room of the building in which the roof window is installed. The fixing of the side rails to the frame structure of the roof window traditionally takes place by the use of fastening means such as screws or other elements interacting with the frame structure to retain the screening arrangement safely to the frame structure in the mounted condition. While the use of such fastening means allow for easy mounting and secure fastening of the side rails, they typically also result in damage of the roof window itself, which is not desirable.

[0003] In the prior art, several attempts have been made to address the inconveniences inherent in such fastening means. While some solutions that provide somewhat satisfactory results have been devised, there is still room for improvement.

Summary of Invention

[0004] With this background, it is therefore an object of the invention to provide an improved internal roof window screening arrangement which at the same time allows for an easy mounting procedure and which provides satisfactory performance in use.

[0005] This and further objects are achieved with an internal roof window screening arrangement of the kind mentioned in the introduction which is furthermore characterised in that the connection part comprises an ad-

hesive portion, in that the connection part is adapted to be mounted on the side member by means of said adhesive portion, and in that the connection part comprises engagement means adapted to engage with engagement means of the side rail to obtain the mounted condition, such that the side rail is freely slidable in the longitudinal direction when engaged with the connection part.

[0006] By providing connection of the side rail by means of the adhesive portion, it is ensured that the risk of damage to the roof window itself is minimised. Thus, in case the screening arrangement needs to be removed, for instance when moving from rental lodging, the roof window remains substantially intact. In principle, the side rail could be connected to the side member with any number of connection parts, for instance two located at a distance from one another, or combined with connection with a top element, if present, of the screening arrangement.

[0007] The freely slidable connection between the engagement means of the connection part and the engagement means of the side rail in the mounted condition entails that only a fraction of the forces that occur during use of the screening arrangement are not transferred to the connection part. Hence, the adhesive portion is able to remain substantially unaffected and thus intact.

[0008] By the term "freely slidable" is to be understood that the engagement means of the connection part are only or mainly configured to provide support to the side rail in the depth and width directions, but not in the longitudinal direction. In other words, any load acting on the side rail will only be transferred to the connection part in the form of frictional forces, which are typically minimal. This is particularly relevant in case of roller blinds having a spring-biased roller shaft, such that side rail will experience a substantially constant tension in the screening position, but also in other types of screening arrangements, in which any operating elements such as a bottom and/or top profile connected to ends of the screening body affect the side rail while being moved.

[0009] Other presently preferred embodiments and further advantages will be apparent from the subsequent detailed description and drawings.

Brief Description of Drawings

[0010] In the following description embodiments of the invention will be described with reference to the schematic drawings, in which

Fig. 1 is a perspective view of a roof window with a mounted internal roof window screening arrangement in a general embodiment of the invention;
Fig. 2A is a perspective view of a roof window with the screening arrangement of Fig. 1 in an assembly condition;
Fig. 2B is a view corresponding to Fig. 2A of another embodiment;
Fig. 2C is a view corresponding to Fig. 2A of a further

embodiment;

Fig. 3 is a perspective view of a connection part in an embodiment of the screening arrangement of the invention;

Fig. 4 is a partial perspective view of a side rail of a screening arrangement according to an embodiment of the invention;

Fig. 5 is a partial perspective view of a connection part of an embodiment of the screening arrangement according to the invention during mounting on a side member of a sash of a roof window by means of a mounting template;

Fig. 6 is a view corresponding to Fig. 5, showing the connection part in a mounted condition;

Fig. 7 is a view corresponding to Fig. 6, showing a side rail of the screening arrangement connected to the connection part;

Fig. 8 is a view of the details of Fig. 7, shown from a different angle;

Fig. 9 shows a detailed partial view of the bottom of the roof window of Fig. 1;

Fig. 10 is a cross-sectional view showing a connection part of a screening arrangement in an embodiment of the invention, mounted on a side member of the sash and connected to a side rail;

Figs. 11A and 11B show schematic cross-sectional views of a connection part and a side rail of a screening arrangement in an alternative embodiment of the invention;

Figs. 12A and 12B show schematic cross-sectional views of a connection part and a side rail of a screening arrangement in a further alternative embodiment of the invention; and

Figs. 13 to 19 show schematic views of various embodiments of the adhesive portion and the engagement means of the connection part.

Description of Embodiments

[0011] In the following detailed description, preferred embodiments of the present invention will be described. However, it is to be understood that features of the different embodiments are exchangeable between the embodiments and may be combined in different ways, unless anything else is specifically indicated. It may also be noted, for the sake of clarity, that the dimensions of certain components illustrated in the drawings may differ from the corresponding dimensions in real-life implementations.

[0012] It is noted that terms such as "up", "down", "left-hand", "right-hand", "exterior", "interior", "outer", "inner" are relative and refers to the viewpoint in question. In general, when referred to an exterior side, this relates to a side of the roof window and/or screening arrangement in the mounted condition facing the outdoors or external side of the building. Conversely, an interior side refers to a side facing the internal side of the building, i.e. typically a subjacent room including any light shaft. Terms such as

"outwards" and "inwards" are directions generally perpendicular to an interior-exterior direction, taking as its base point a centre of the roof window.

[0013] Throughout the embodiments, elements having the same or analogous function are denoted by the same reference numerals. Only differences will be described in detail.

[0014] Referring initially to Figs. 1 and 2A, a schematic drawing of a roof window 1 is shown from an internal, or interior, side. Typically, the roof window 1 comprises one or more frame structures, typically a stationary frame 3 and a sash 2 carrying a glazing element 4 such as a transparent pane. The sash 2 may be openable or fixed. Fig. 1 shows an embodiment of a roof window 1 comprising a stationary frame 3 and an openable sash 2. The frame structure of the roof window will in the following be represented by the sash 2 which comprises two side members 2.2 and 2.3 extending in a height direction of the roof window 1, here denoted a longitudinal direction L. The sash 2 further comprises a top member 2.1 and a bottom member 2.4 extending in a width direction W. The width direction W and length direction L define a plane, to which a depth direction D is perpendicular. A window opening 5 is thus formed, indicated in Fig. 2A and here defined by the inner sides of the sash members 2.1, 2.2, 2.3, 2.4, and which window opening 5 is to be screened by a roof window screening arrangement 10 according to the invention as will be described in further detail below. In roof windows without a sash frame structure, the screening arrangement 10 may be arranged in the stationary frame 3, such as between two side members of the stationary frame 3.

[0015] The roof window 1 is adapted to be installed in an inclined roof, here by means of a set of frame brackets connected to the stationary frame 3 and of which two representative frame brackets 6 are shown. It is noted that the inclinations indicated throughout the drawings are merely representations and an internal roof window screening arrangement 10 according to the invention may be mounted in a roof window 1 with an inclination different from the one indicated in these embodiments.

[0016] In Fig. 1, the roof window screening arrangement 10 is shown in a mounted condition in the roof window 1. The screening arrangement 10 comprises two side rails 12, 13 connected to respective sash side members 2.2, 2.3. The side rail 13 is here a mirror version of side rail 12 and the two side rails 12, 13 are mounted in the same manner. In the following, detailed reference only to the right-hand side rail 12 will be made; it is to be understood that any features relating to the side rail 12 apply to the opposite side rail 13 as well.

[0017] Referring briefly also to Fig. 4, the two side rails 12, 13 each extends by its length extension in the longitudinal direction L in the mounted condition of the screening arrangement 10. As shown for side rail 12 in Fig. 4, each side rail 12, 13 has a side rail front 12.2 having a width dimension extending in parallel with the plane in the mounted condition, and a leg portion 12.3 extending at an

angle to the side rail front 12.2, for instance at substantially right angles, that is, in the depth direction D. The precise angle depends on the configuration of the sash 2, which in some roof windows may have a slight inclination. The side rails 12, 13 are also provided with engagement means to be described in further detail below. When referring to the side rails 12, 13 being in the mounted condition, i.e. in a position in which each side rail 12, 13 is substantially parallel to the plane, it is to be understood as the side rail 12 being attached to the side member 2.2 of the sash 2 and the side rail 13 to the other side member 2.3.

[0018] In the embodiment shown in Figs. 1 and 2A, the screening arrangement additionally comprises a top element 11 extending between the two side members 2.2 and 2.3 in proximity of the top member 2.1 as shown in Fig. 1. The top element 11 may comprise a front cover 11.1 as indicated, a back cover and two end pieces, with one end piece arranged at each end of the top element 11 as is known in the art, to be connected to mounting bracket which in some types of roof windows are pre-mounted on the side members 2.2, 2.3.

[0019] In this embodiment, the side rail 12 is connected to the side member 2.2 partly by means of a connection part 20, partly indirectly via the top element 11 of the screening arrangement 10. Correspondingly, another connection part 20 is mounted on the other sash side member 2.3 to provide the connection of the side rail 13 to the side member 2.3 of the sash 2 in the mounted condition of the screening arrangement 10.

[0020] Fig. 2A shows the side rail 12 being attached to the top element 11 by a hinge connection comprising a connection arm 7. This provides a secure attachment of the screening arrangement 10 to the roof window 1 without the need of screws, nails or other fastening means that break the surface of the side member 2.3. In these embodiments, the side rail 12 is configured to assume a first position at an angle relative to the plane in an assembly condition and a second position parallel to the plane. In the second position the side rail 2.2 is attached to the side member 2.2 of the frame structure to obtain the mounted condition.

[0021] The screening arrangement 10 additionally comprises a screening body 15 having two side edges and a predefined length between a first end portion and a second end portion. The screening body 15 is movable in the longitudinal direction L between a non-screening position and a screening position in which the screening body 15 substantially covers the glazing element 4. In the non-screening position, the screening body 15 is configured to be accommodated in the top element 11 as indicated in Fig. 2A. In Fig. 1, the window opening 5 covered by the glazing element 4 is in turn covered by the screening body 15. To operate the screening body 15 of the screening arrangement 10, a bottom profile 14 is provided to extend substantially in parallel with the top element 11 and is connected to the second end portion of the screening body 15. The screening arrangement 10 of

the present embodiment is a roller blind, in which the screening body 15 has shading or light-dampening properties and which at its upper end is fastened to a spring-biased roller shaft (not shown) in the top element. As a consequence, the screening body 15 and the bottom profile 14 are biased to move towards the top element 11 in the screening position.

[0022] In comparison, in the embodiments of Figs. 2B and 2C, no top element is present and each side rail 12, 13 is attached to the sash 2 solely by means of a respective set of connection parts 20. In the embodiment of Fig. 2B, two connection parts 20 are placed at a distance from each other in the longitudinal direction L. During mounting, the side rails 12, 13 are connected to the respective side member 2.2, 2.3 of the sash by moving the side rails 12, 13 in the depth direction D. The embodiment of Fig. 2C makes use of a set of three connection parts 20, and the side rails 12, 13 are moved in parallel with the depth direction D for mounting. It is noted that also in such embodiments which make use of a top element 11, two or more connection parts 20 may be provided to connect each side rail 12, 13 to the respective side member 2.2, 2.3. This is particularly advantageous in the case of tall roof windows, in which the side rails 12, 13 have a substantial extension in the longitudinal direction L.

[0023] In the following, the configuration of the connection part 20 and the engagement with the side rails 12, 13 will be described in more detail with particular reference to Figs. 3 and 4.

[0024] The connection part 20 comprises an adhesive portion 21 on the face adapted to be positioned on a plane surface of the side member 2.2. In a supply condition, the adhesive portion 21 is typically covered by a sacrificial liner 21a which is removed prior to placing the connection part 20 with the adhesive portion 21 on the side members 2.2, 2.3 of the sash 2. The connection part 20 is typically formed as a moulded plastic component to result in a flexible, thin-walled element to which the adhesive portion 21 is applied.

[0025] The connection part 20 comprises engagement means 22 adapted to engage with the side rails 12, 13 to obtain the mounted condition by means of counterpart engagement means of the side rails 12, 13 in such a way that the side rail 12, 13 is freely slidable in the longitudinal direction L when engaged with the connection part 20. In principle, the connection part 20 can be attached to the side member 2.2, 2.3 at substantially any point in the longitudinal direction L of the side member 2.2, 2.3. At the same time, the freely slidable connection means that the engagement means 22 of connection part 20 will only transfer a minimum of forces to the adhesive portion 21 during operation of the screening arrangement 10.

[0026] In the embodiments shown in Figs. 3 and 4, the engagement means 22 comprise an engagement tongue 221 of a tab 222 connected to a central portion of the connection part 20. The tab 222 is connected to the central portion of the connection part 20 by means of a resilient suspension ring 223. The engagement tongue

221 is configured to be introduced into the counterpart engagement means of the side rail 12, which is here formed as a track 12.1 extending in the longitudinal direction L. The track 12.1 is provided within the leg portion 12.3 of the side rail 12 in that the leg portion 12.3 comprises two track members 12.i with two track retainers 12.ii delimiting a track opening facing an interior edge of the connection part 20 in the depth direction D, when bringing the side rail 12 towards the connection part 20,

[0027] To obtain the mounted condition of the side rail 12, the track 12.1 is placed opposite the engagement means 22 and subsequent movement of the side rail 12 in the depth direction entails that the engagement tongue 221 of the connection part 20 is inserted between the track retainers 12.i ii and enters the track 12.1.

[0028] The engagement between the side rail 12, 13 and the connection part 20 is advantageously releasable. Here, the engagement means 22 comprise a snap-lock mechanism to lockingly engage the connection part 20 with the side rail 12 in the mounted condition, but which may be released by pressing the tab 222 thereby releasing the engagement between the engagement tongue 221 and the track 12.1 and withdrawing the side rail 12, 13 in the opposite direction.

[0029] The snap-lock mechanism makes it possible to simply push the side rail over the connection part to allow the engagement means of the connection part to engage with the counterpart engagement means of the side rail. Conversely, in case it is desired to release the side rail, the snap-lock mechanism is deactivated, and the side rail simply pulled out of engagement with the connection part.

[0030] The snap-lock mechanism is here of the type in which the engagement is automatically, or directly, activated when pushing the side rail 12, 13 over the engagement means 22 of the connection part 20. In order to release the engagement, the engagement means are manually deactivated as described in the above, by pressing the tab 222 to release the engagement tongue 221, and then pull the side rail 12, 13 out of engagement with the connection part 20.

[0031] As an alternative, it is conceivable to form the snap engagement as a force-locking structure, in which the engagement is dependent on frictional contact between the engagement means of the connection part and the side rail, respectively, and which is overcome by applying a sufficient force pulling the side rail out of engagement.

[0032] Further details of the side rail 12 shown in Fig. 4 include openings 12.4 and 12.6, and a track plate 12.5 having functions in connecting the connection arm 7 of the embodiment of Figs. 1 and 2A to the side rails 12, 13.

[0033] In particular, the openings 12.4 and 12.6 have a function in such embodiments in which the connection arm 7 is associated to a spring assembly providing a bias in the longitudinal direction L in the mounted condition of the screening arrangement 10. Such a spring assembly

may constitute one of a plurality of possibilities for a side rail suspension system. The side rail suspension system ensures that the side rail is fixated, or fastened, in the longitudinal direction L in the mounted condition. Other conceivable possibilities include a spring assembly at the bottom of the side rail, either located within the side rail 12, 13 to provide a compression mount relative to the bottom member 2.4 of the sash 2, or as a separate foot member attached to the bottom member 2.4 and/or the adjacent side member 2.2 or 2.3, which in turn secures the side rail 12, 13. Corresponding configurations are applicable at the top in screening arrangements without a top element. Finally, in embodiments including a top element 11, the side rail 12, 13 may be lodged behind a front of the top element 11, i.e. on the exterior side of such a front.

[0034] A mounting sequence of a connection part 20 and the side rail 13 at the side member 2.3 of the sash 2 is shown in Figs. 5 to 7. To facilitate mounting of the connection part 20 to the side member 2.3, a mounting template 30 is provided for retention and positioning of the connection part 20 on the side member 2.3 prior to adhering the connection part 20 to the side member. The mounting template 30 is adapted to releasably retain the connection part 20 at a distance from the side frame member 2.3 when the mounting template 30 is in abutment with the side frame member 2.3 but before the retention is released. Blocking means 36 limit the releasable retainment to the direction of the surface of the side member 2.3. First guiding means are provided in the form of guiding sections 38. Each guiding section 38 grips around an edge of the side member 2.3, thereby restricting movement towards the exterior side of the roof window, and ensures that when the connection part 20 is released from the mounting template 30, the connection part 20 is placed on the side member 2.3 at the correct depth and in the correct distance from the glazing element 4. Second guiding means are here provided in the form of two spacing sections 39 formed as substantially planar sections at either side of an opening 34 so that the mounting template 30 is movable in the longitudinal direction L until it abuts the bottom member 2.4 of the sash 2. Subsequent release of the connection part 20 from the mounting template 30 results in the position of Fig. 6. Connection of the side rail 12 substantially as described in the above results in the position shown in Fig. 7, the interaction between the connection means 22 of the connection part 20 and the track 12.1i forming the counterpart connection means of the side rail 13 is shown in the view from the exterior of in Fig. 8. A further detail is that the mounting template 30 in the embodiment shown comprises a finger grip section 35.

[0035] Following mounting of the screening arrangement 10 substantially as described in the above, the screening arrangement 10 is ready for use. Details of a further embodiment are shown in Fig. 9, in which the bottom profile 14 is configured to interact with the side rails 12, 13 by means of a guide element 14.1 at each

longitudinal end of the bottom profile 14. Each guide element 14.1 is provided with a guide element nose 14.2 configured to slide along the side rail front 12.2 of the side rail 12, 13. In this way, it is ensured that the bottom profile 14 and the screening body 15 are not moved involuntarily towards the glazing element 14. This is particularly advantageous in such embodiments in which the side rails 12, 13 do not comprise a guide track. To provide an end stop for the bottom profile 14 in order to allow the screening body 15 to be parked in the fully screening position, an end stop 14.3 is provided. The presence of an end stop 14.3 to interact with one or both ends of the bottom profile 14 is particularly advantageous in the case of a spring-biased roller blind as described in connection with the embodiment of Figs. 1 and 2A, since the end stop or end stops 14.3 efficiently counteract(s) the movement towards the top element 11.

[0036] A more detailed view of the engagement between the engagement means 22 of the connection part 20 and the counterpart engagement means of the side rails 12, 13 is shown in Fig. 10, here for the side rail 13.

[0037] The adhesive portion 21 of the connection part 20 is attached to an inwards facing surface of the side member 2.3 substantially as described in the above. It is noted that the inwards-facing surface is provided with a slight inclination relative to the depth direction D such that the window opening 5 area increases from the glazing element 4 towards the interior. The resilient suspension ring 223 with the tab 222 and engagement tongue 221 of the engagement means 22 protrude from the general plane of the connection part 20, which is parallel to the inwards-facing surface of the sash member, in the width direction W. As is also apparent, the engagement means 22 have an extension in the depth direction D namely such that engagement tongue 221 in the embodiment shown is located beyond an outer circumference of the adhesive portion 21 and the periphery of the remaining portions of the connection part 20.

[0038] An alternative engagement form is shown in Figs. 11A and 11B, in which the connection part 20 is provided with substantially T-shaped engagement means 22'. Correspondingly, the side rail 13 is provided with an opening 12.7 (corresponding in substance to openings 12.4 and 12.6 as shown in Fig. 4) such that the side rail 13 may be moved over the engagement means 22' in the depth direction D, following which the side rail 13 is moved in the longitudinal direction L such that the head of the T engages with the track retainers 12.1ii. This presupposes that there is room for moving the side rails 12, 13 within the window opening 5 or on the sash 2.

[0039] A further alternative embodiment is shown in Figs. 12A and 12B, in which the engagement means of the side rail 13 is provided as a track 12.8 on a side of the leg portion 12.3, with a track opening facing the connection part 20 in the width direction W. The engagement means 22" of the connection part 20 protrude in the width direction W and are schematically illustrated as a flexible

hook to enter the track 12.8. Another detail in this embodiment is that the leg portion 12.3 is provided with a guide track 12.9 facing the screening body 15 and configured to guide a side edge of the screening body 15.

[0040] Referring now Figs. 13 to 19, the configuration of the adhesive portion 21 and the relationship of the engagement means 22 and the attachment or fastening thereof to the remaining portions of the connection part 20 will be described in more detail.

[0041] In general, the adhesive portion 21 of the connection part 20 has a predefined outer circumference, and the engagement means 22 of the connection part 20 are provided at a distance from the predefined outer circumference. This has proven to be instrumental in preventing the adhesive portion 21 from peeling during use. The engagement means 22 are advantageously provided such that the active engagement part, i.e. for instance the engagement tongue 221 in the embodiments comprising a resilient suspension ring 223 with the tab 222 and engagement tongue 221, is provided at some distance from the attachment location of the resilient suspension ring 223 to the remaining, plane portions of the connection part 20 and the adhesive portion 21.

[0042] The dimensions and the shape of the adhesive portion 21 is important as well. Exemplary configurations are shown in Figs. 13 to 19. The predefined outer circumference of the adhesive portion 21 may in principle assume any shape but the shown substantially rectangular or elliptic shapes are advantageous from a number of reasons, not least from a user perspective, since the connection parts 20 with respective adhesive portions 21 will most often be partially visible.

[0043] The adhesive portion 21 may be a coherent adhesive portion having the substantially the same surface area as the overall connection part 20, or on part of the area of the connection part 20, or larger than the area of the connection part 20. It is also conceivable to form the adhesive portion in two or more parts, for instance such that one connection part 20 comprises two adhesive portions 21 at a distance from each other. Here, it is shown that the engagement means 22 are provided in a gap between neighbouring adhesive portions 21.

[0044] Taking the specific engagement tongue 221 of the shown engagement means 22 as example, the engagement means 22 may have such an extension that they protrude beyond the outer circumference of the adhesive portion or be provided within the outer circumference.

[0045] The invention is not limited to the embodiments shown and described in the above, but various modifications and combinations may be carried out.

List of reference numerals

[0046]

- | | |
|---|------------------------|
| 1 | roof window |
| 2 | frame structure / sash |

- 2.1 top member
- 2.2 side member
- 2.3 side member
- 2.4 bottom member
- 3 stationary frame
- 4 glazing element / pane
- 5 window opening
- 6 frame bracket
- 7 connection arm
- 10 screening arrangement
- 11 top element 11.1 front cover
- 12 side rail

- 12.1 track
- 12.1i track member
- 12.1ii track retainer
- 12.2 side rail front
- 12.3 leg portion
- 12.4 opening
- 12.5 track plate
- 12.6 opening
- 12.7 insertion opening
- 12.8 track
- 12.9 guide track
- 13 side rail
- 14 bottom profile

- 14.1 guide element
- 14.2 guide element nose
- 14.3 end stop
- 15 screening body

- 20 connection part
- 21 adhesive portion
- 21a sacrificial liner
- 22 engagement means

- 221 engagement tongue
- 222 tab
- 223 resilient suspension ring
- 22' engagement means (alternative embodiment)
- 22" engagement means (further alternative embodiment)

- 30 mounting template
- 34 opening
- 35 finger grip section
- 36 blocking means

- 38 guiding section
- 39 spacing section

- L longitudinal direction
- W width direction
- D depth direction

Claims

1. An internal roof window screening arrangement (10) for a roof window (1), the roof window (1) having a frame structure (2) comprising a top member (2.1) and a bottom member (2.4) extending in a width direction (W) and two mutually parallel side members (2.2, 2.3) extending in a longitudinal direction (L), the width direction (W) and longitudinal direction (L) defining a plane,
 5 the screening arrangement (10) comprising two side rails (12, 13) and at least one connection part (20) for each side rail (12, 13), each side rail (12, 13) being adapted to be mounted on a side member (2.2, 2.3) of the frame structure (2) by means of the at least one connection part (20) to obtain a mounted condition,
 10 **characterised in that** the connection part (20) comprises an adhesive portion (21),
in that the connection part (20) is adapted to be mounted on the side member (2.2, 2.3) by means of said adhesive portion (21),
 15 and **in that** the connection part (20) comprises engagement means (22; 22'; 22") adapted to engage with engagement means (12.1; 12.8) of the side rail (12, 13) to obtain the mounted condition, such that the side rail (12, 13) is freely slidable in the longitudinal direction (L) when engaged with the connection part (20).
 20
2. An internal roof window screening arrangement (10) according to claim 1, wherein the engagement between the engagement means (22; 22'; 22") of the connection part (20) and the engagement means (12.1; 12.8) of the side rail (12, 13) is releasable.
 25
3. An internal roof window screening arrangement (10) according to claim 2, wherein the engagement means comprise a snap-lock mechanism (22; 22") or a bayonet coupling (22'), preferably of the engagement means of the connection part (20).
 30
4. An internal roof window screening arrangement (10) according to any one of the preceding claims, wherein the engagement means of the side rail (12, 13) comprises a track (12.1; 12.8) extending in the longitudinal direction (L).
 35
5. An internal roof window screening arrangement (10) according to any one of the preceding claims, wherein each side rail (12, 13) comprises a side rail front (12.2) configured to extend substantially in parallel with said plane and a leg portion (12.3) extending at an angle to the side rail front (12.2), preferably at substantially right angles, in the depth direction (D).
 40

6. An internal roof window screening arrangement (10) according to claims 4 and 5, wherein the track (12.1) is provided within the leg portion (12.3), the leg portion (12.3) comprising two track members (12.i) with two track retainers (12.1ii) delimiting a track opening facing an interior edge of the connection part (20) in the depth direction (D), in the mounted condition of the side rail (12, 13).
7. An internal roof window screening arrangement (10) according to claims 4 and 5, wherein the track is provided as a track (12.8) on a side of the leg portion (12.3) with a track opening facing the connection part (20) in the width direction (W).
8. An internal roof window screening arrangement (10) according to any one of claims 5 to 7, wherein the leg portion (12.3) is provided with a guide track (12.9) facing a screening body (15) and configured to guide a side edge of the screening body (15).
9. An internal roof window screening arrangement (10) according to any one of the preceding claims, wherein the adhesive portion (21) of the connection part (20) has a predefined outer circumference, and wherein the engagement means (22) of the connection part (20) are provided at a distance from the predefined outer circumference.
10. An internal roof window screening arrangement (10) according to claim 9, wherein the predefined outer circumference of the adhesive portion is substantially rectangular or elliptic.
11. An internal roof window screening arrangement (10) according to claim 9 or 10, wherein the connection part (20) comprises at least two adhesive portions (21) at a distance from each other, the engagement means (22) being preferably provided in a gap between neighbouring adhesive portions (21).
12. An internal roof window screening arrangement (10) according to any one of claims 9 to 11, wherein the engagement means (22) comprise an engagement tongue (221) of a tab (222) connected to a central portion of the connection part (20), and wherein the tab (222) is connected to the central portion of the connection part (20) by means of a resilient suspension ring (223).
13. An internal roof window screening arrangement (10) according to any one of the preceding claims, wherein a set of at least two connection parts (20) is configured to be mounted on each side member (2.2, 2.3) of the sash (2) at a distance from each other in the longitudinal direction (L), and wherein each side rail (12, 13) is configured to be connected to the connection parts (20) of the respective set such that the connection parts (20) constitute the sole connection means of the side rails (12, 13) to the respective side member (2.2, 2.3).
14. An internal roof window screening arrangement (10) according to any one of claims 1 to 12, wherein the screening arrangement (10) comprises a top element (11), and wherein each side rail (12, 13) is connected to the top element (11) by means of a hinge connection comprising a connection arm (7) and to the side member (2.2, 2.3) of the sash (2) by means of at least one connection part (20) positioned at a distance from the top element (11).
15. An internal roof window screening arrangement (10) according to any one of the preceding claims, wherein the screening arrangement comprises a screening body (15) and a bottom profile (14), wherein the bottom profile (14) is configured to interact with the side rails (12, 13) by means of a guide element (14.1) at each longitudinal end of the bottom profile, and wherein each guide element (14.1) is provided with a guide element nose (14.2) configured to slide along a side rail front (12.2) of the side rail (12, 13).

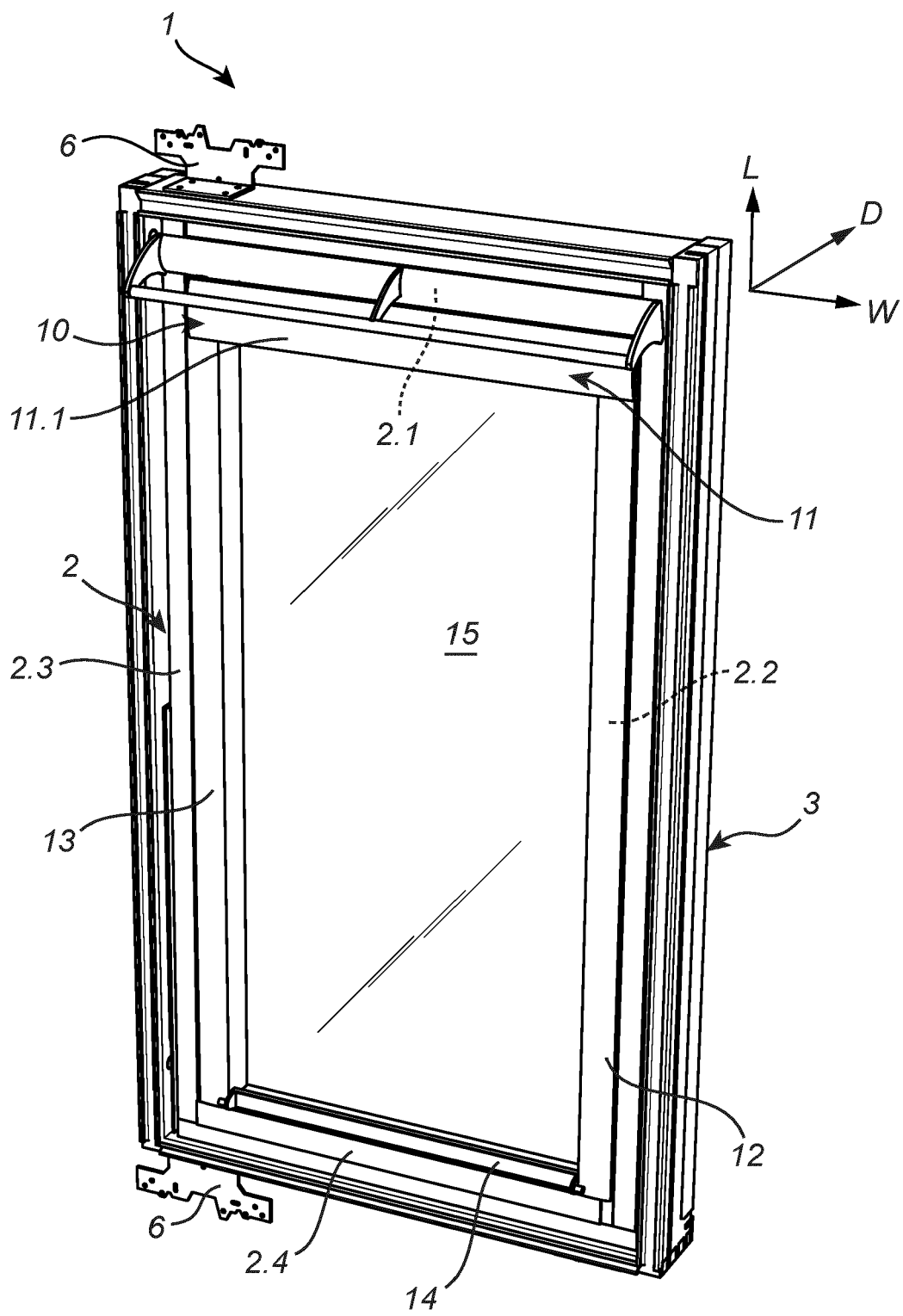


Fig. 1

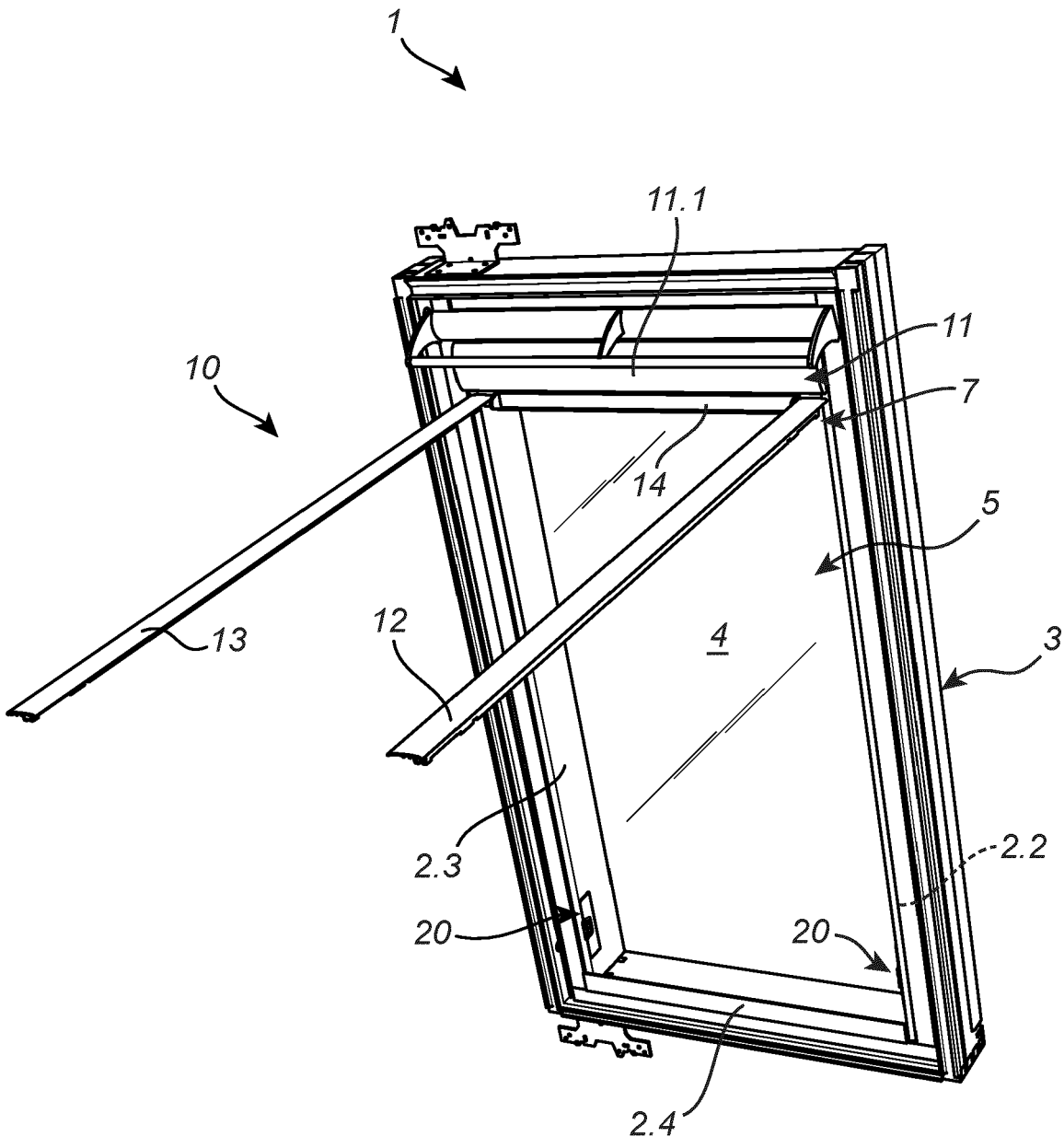


Fig. 2A

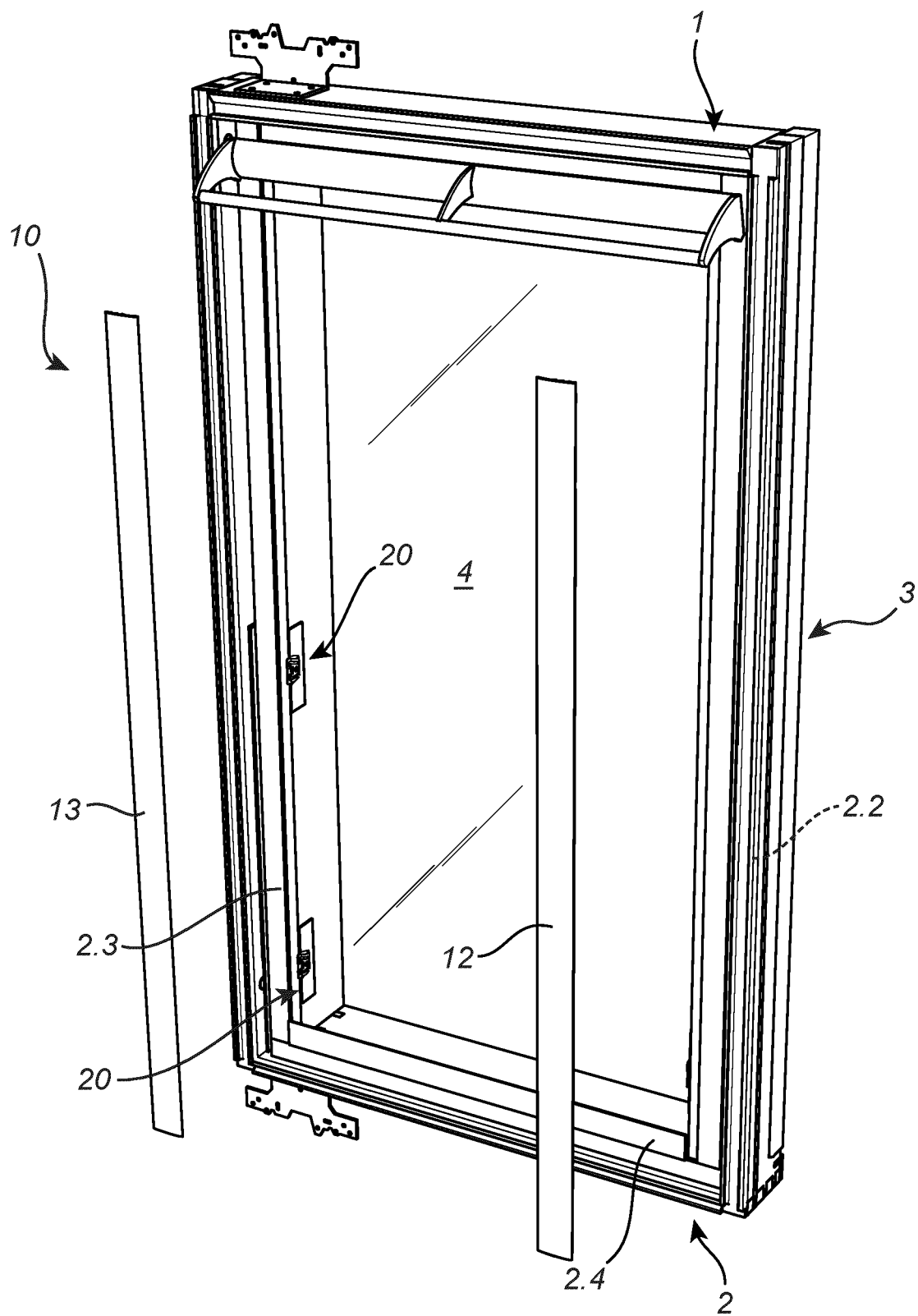


Fig. 2B

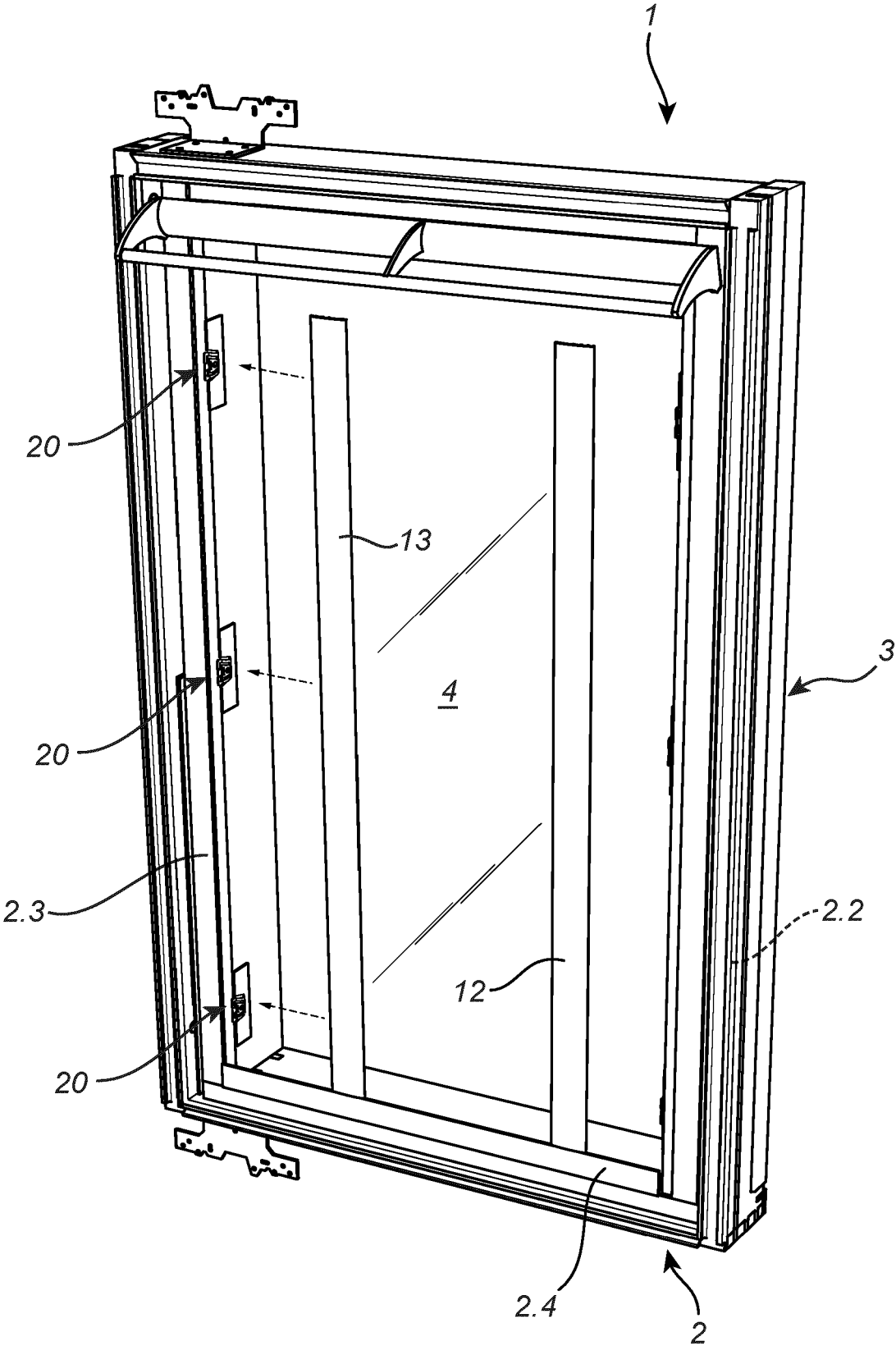


Fig. 2C

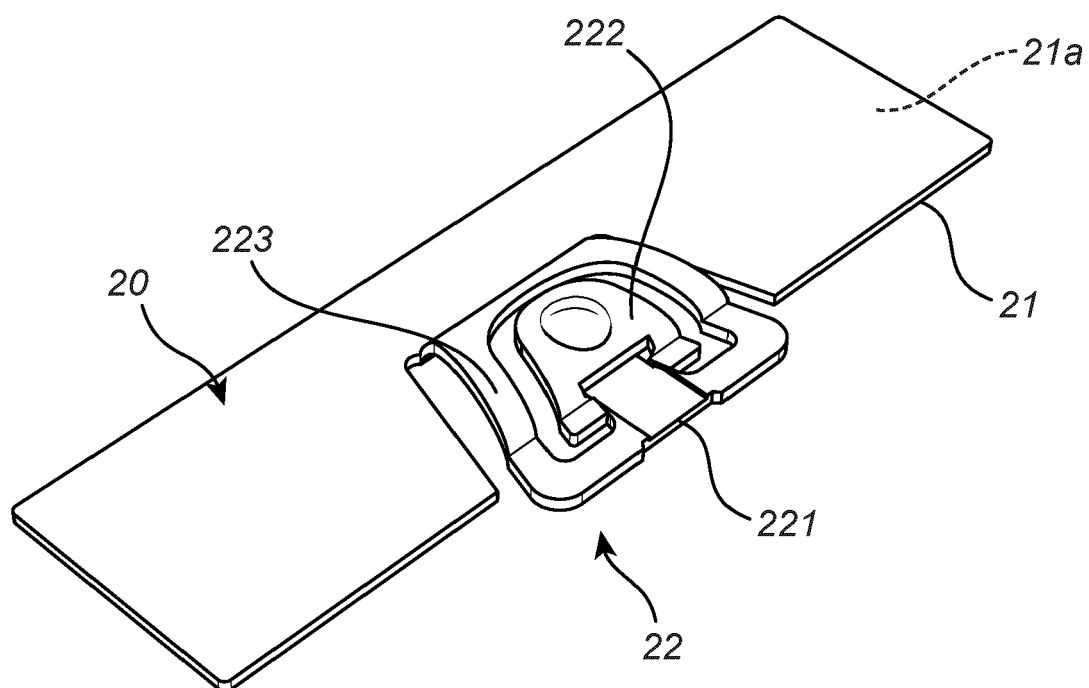


Fig. 3

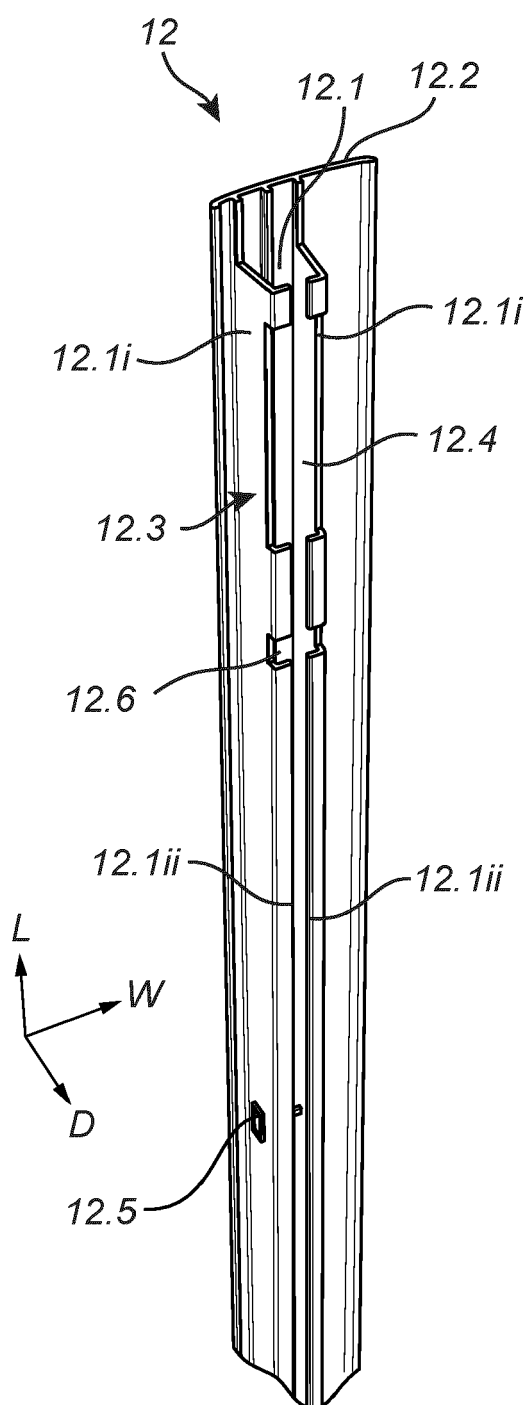


Fig. 4

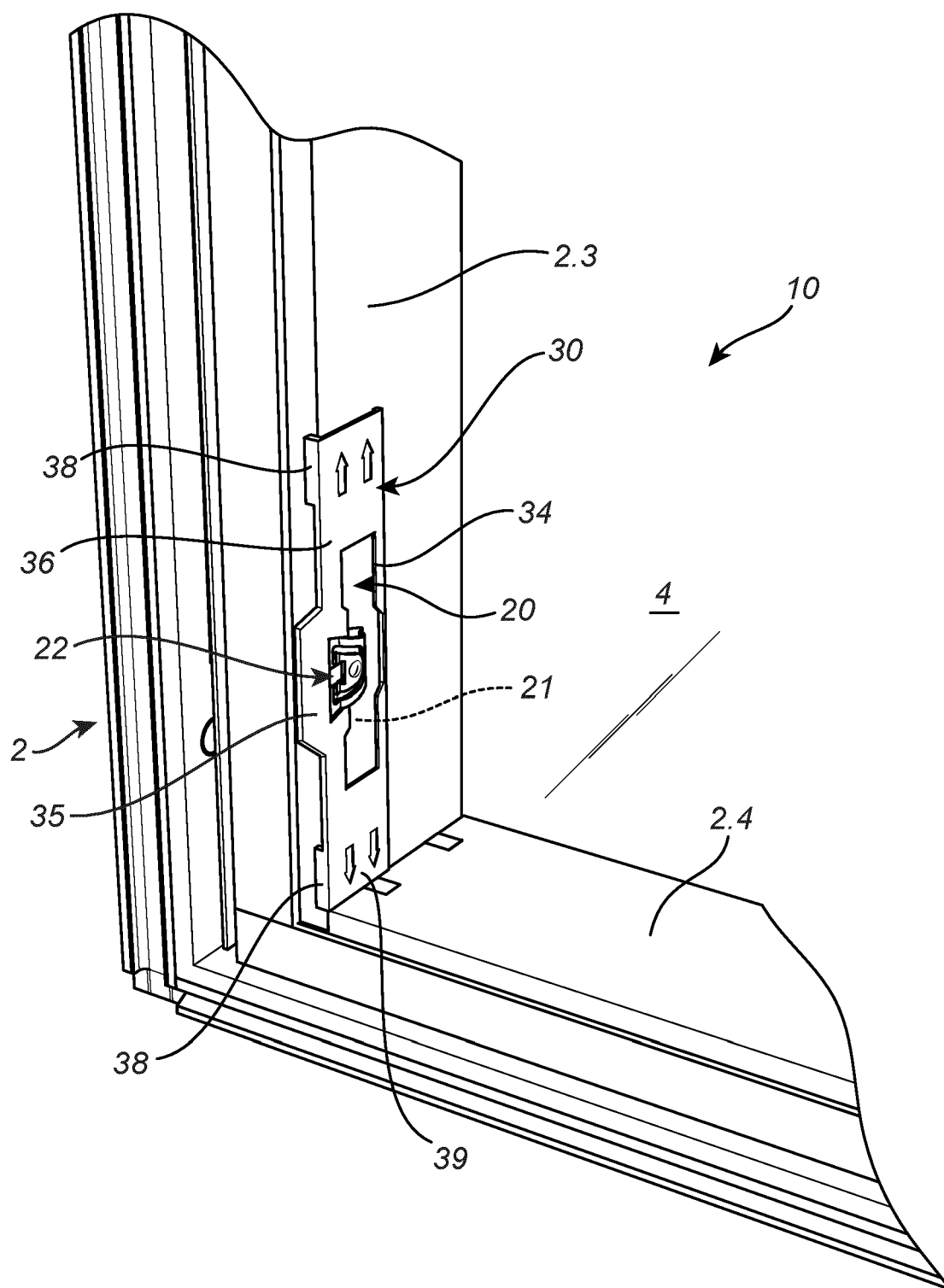


Fig. 5

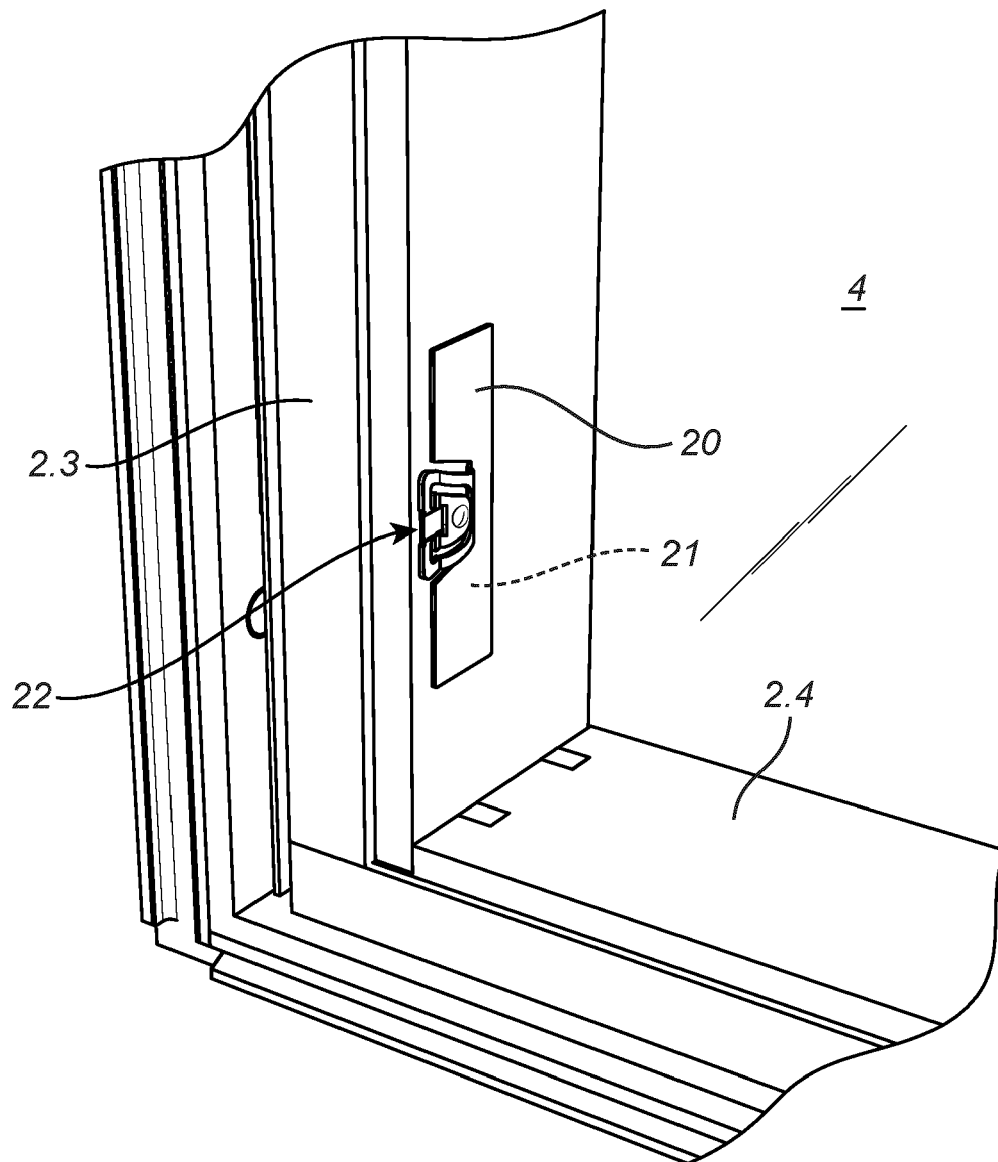


Fig. 6

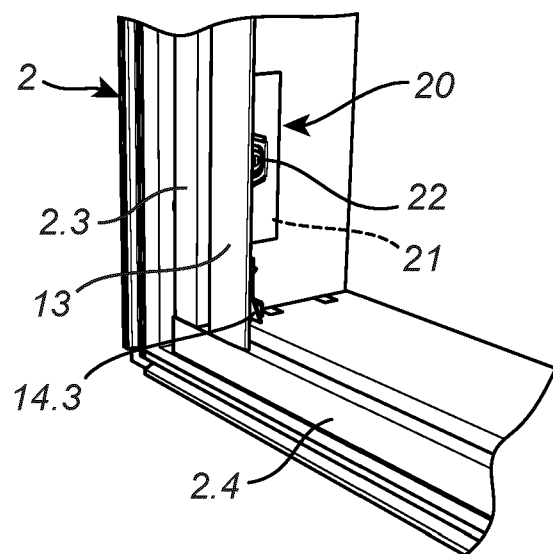


Fig. 7

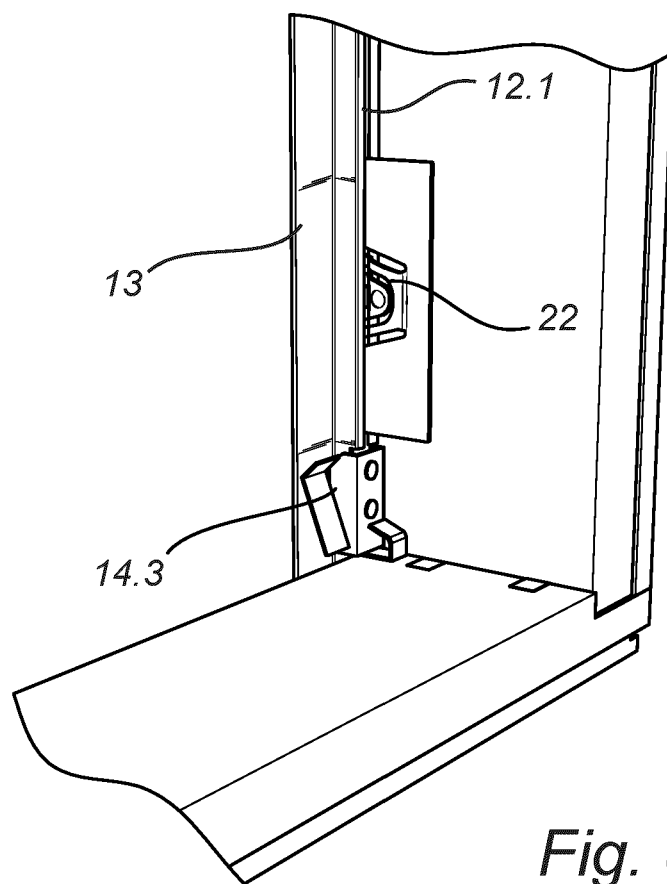


Fig. 8

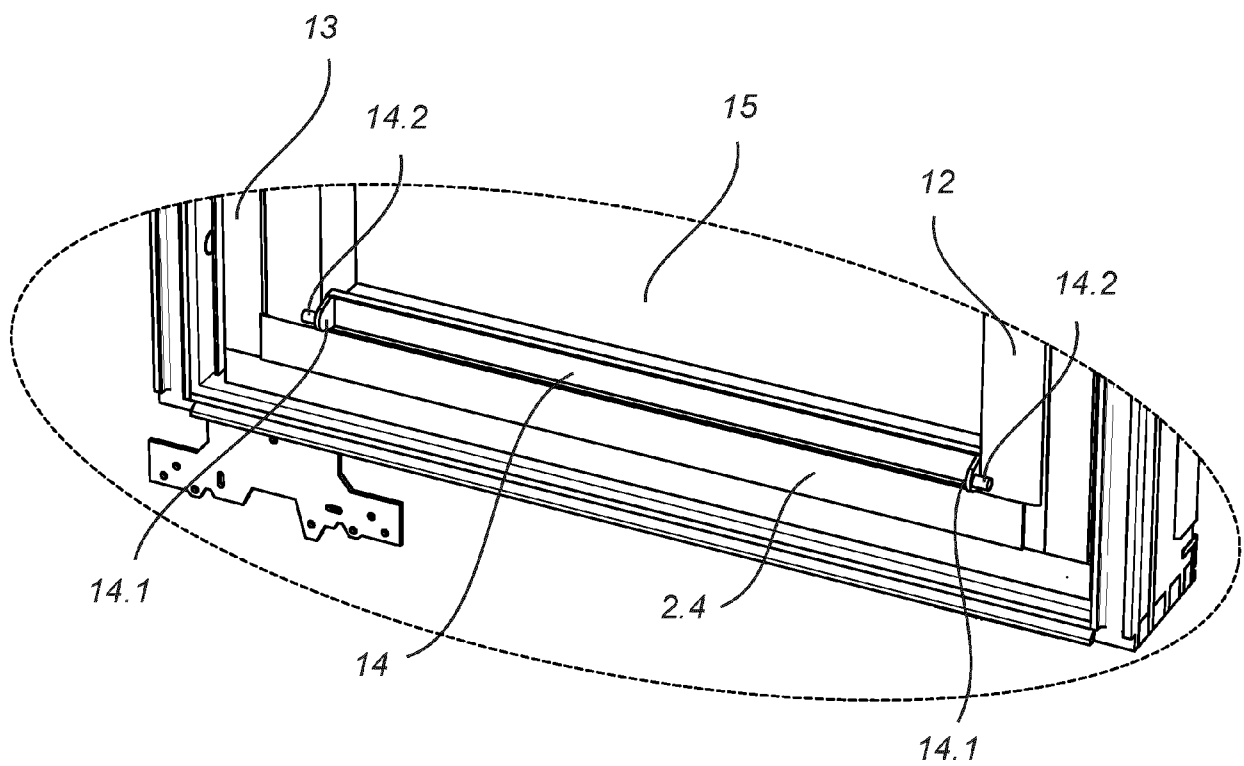


Fig. 9

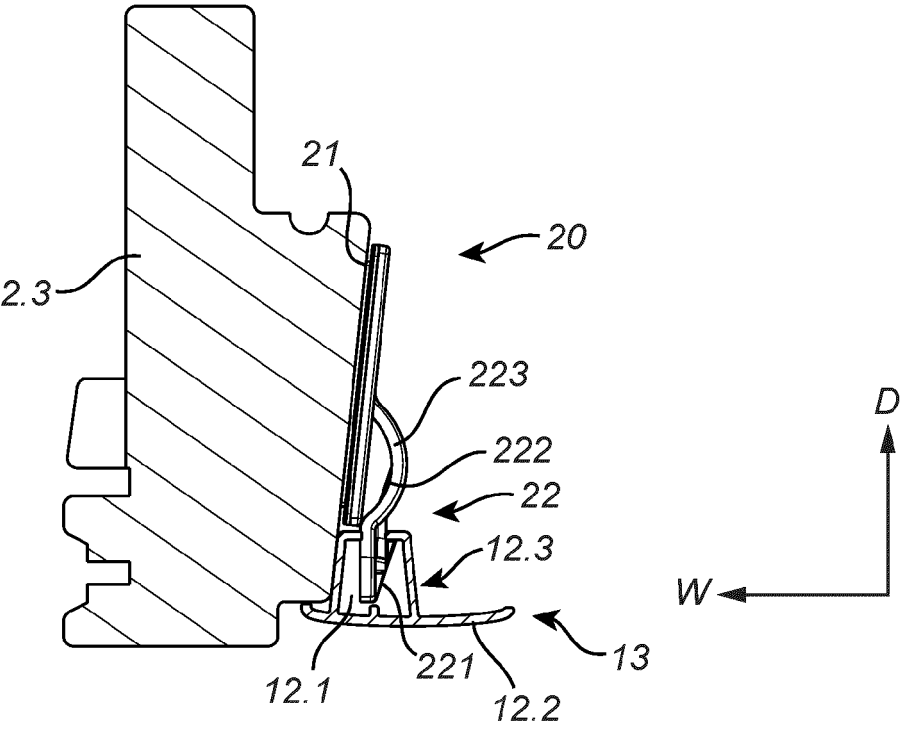


Fig. 10

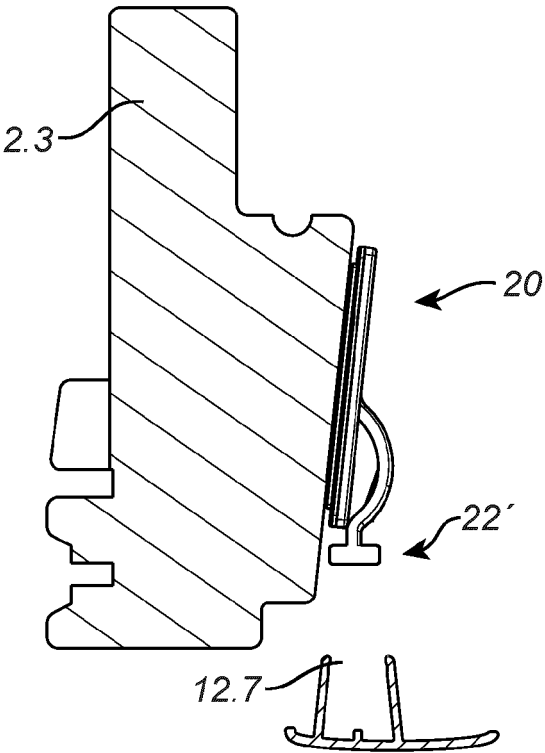


Fig. 11A

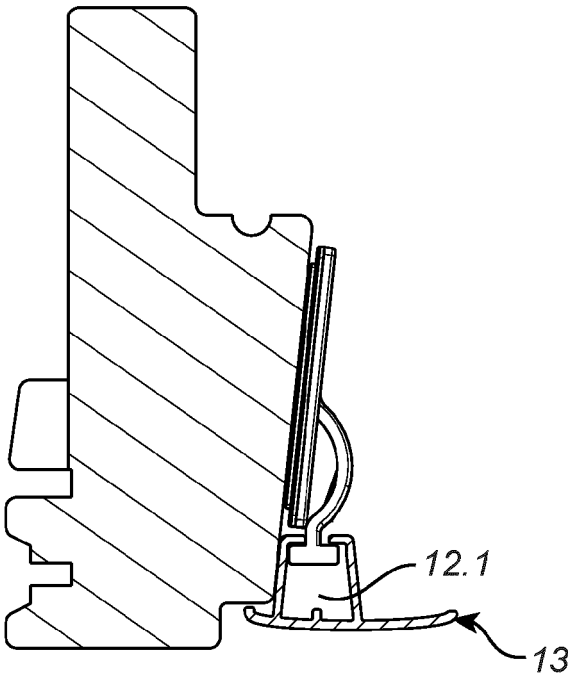


Fig. 11B

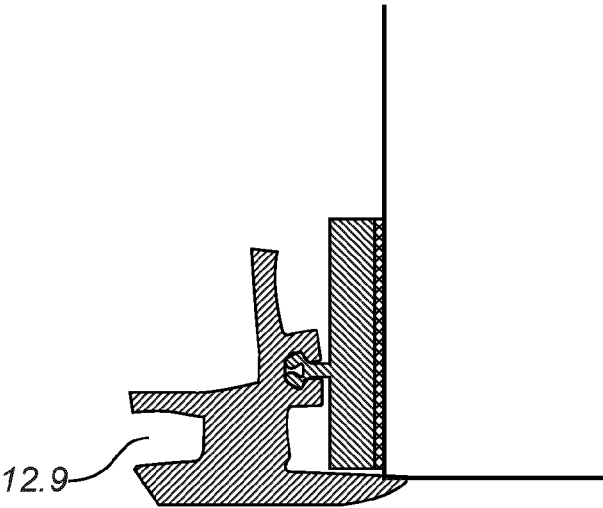


Fig. 12A

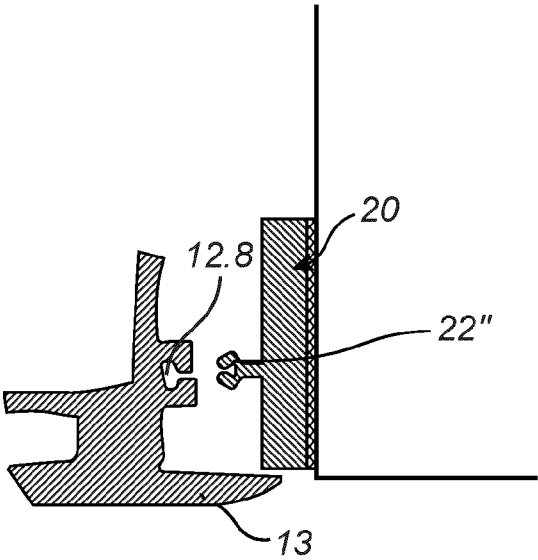


Fig. 12B

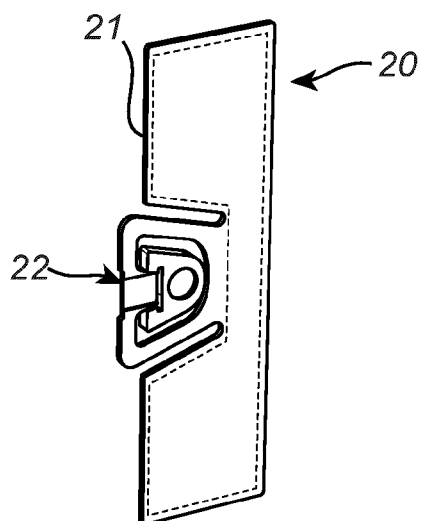


Fig. 13

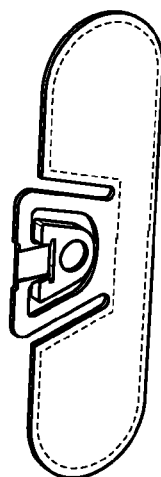


Fig. 14

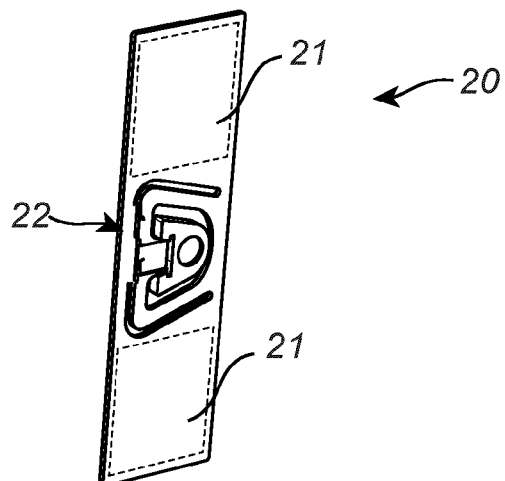


Fig. 15

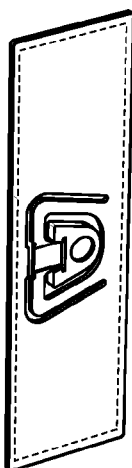


Fig. 16

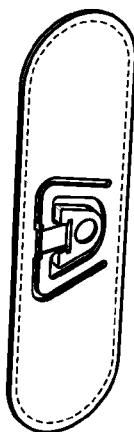


Fig. 17

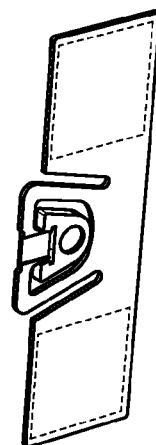


Fig. 18

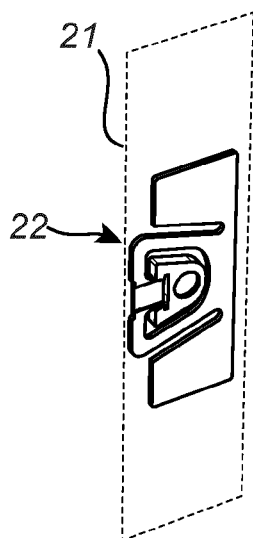


Fig. 19



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Application Number

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A	* figures 6-8 * * column 4, lines 36-45 *	12	E06B9/58
X	US 9 512 673 B2 (IDEAS BY DESIGN LTD [GB]; IDEAS BY DESIGN LTD [GB]) 6 December 2016 (2016-12-06)	1-6,8, 10,13-15	
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A	* figure 5 *	12	
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			E04D E06B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		4 November 2024	Tran, Kim Lien
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X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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